

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A gallium nitride (GaN)-based compound semiconductor device, comprising:
a GaN-based light emitting layer member; and formed above a substrate,
a buffer layer adjacent to the light emitting member,
wherein the light emitting layer member comprises a multilayer quantum well layer
structure including in which an InGaN well layer and an AlInGaN barrier layer
are layered.
2. (Currently Amended) ~~[[A]]~~ The gallium nitride GaN-based compound semiconductor device according to claim 1, wherein a compositional ratio of In in the InGaN well layer is 5% or greater and 15% or smaller.
3. (Currently Amended) ~~[[A]]~~ The gallium nitride GaN-based compound semiconductor device according to claim 1, wherein a compositional ratio of In in the InGaN well layer is 5% or greater and 13% or smaller.
4. (Currently Amended) A gallium nitride (GaN)-based compound semiconductor device ~~according to claim 1,~~ comprising:
a GaN-based light emitting member,
wherein the light emitting member comprises a multilayer quantum well structure
including an InGaN well layer and an AlInGaN barrier layer, and
wherein a thickness of the InGaN well layer is 1 nm or greater and 2 nm or smaller.
5. (Currently Amended) ~~[[A]]~~ The gallium nitride GaN-based compound semiconductor device according to claim ~~[[1]]4,~~ wherein ~~[[a]]~~ the thickness of the InGaN well layer is 1.3 nm or greater and 1.8 nm or smaller between 1.3 nm and 1.8 nm.
6. (Currently Amended) A gallium nitride (GaN)-based compound semiconductor device ~~according to claim 1,~~ comprising:
a GaN-based light emitting member,

- wherein the light emitting member comprises a multilayer quantum well structure including an InGaN well layer and an AlInGaN barrier layer, and
wherein a compositional ratio of Al in the AlInGaN barrier layer is 14% or greater and 40% or smaller, and a compositional ratio of In in the AlInGaN barrier layer is 0.1% or greater and 5% or smaller.
7. (Currently Amended) [[A]] The gallium-nitride GaN-based compound semiconductor device according to claim [[1]]6, wherein a compositional ratio of Al in the AlInGaN barrier layer is between 16% or greater and 40% or smaller, and a compositional ratio of In in the AlInGaN barrier layer is between 0.1% or greater and 3% or smaller.
8. (Currently Amended) [[A]] The gallium-nitride GaN-based compound semiconductor device according to claim 1, further comprising: wherein the an AlInGaN buffer layer adjacent to the light emitting layer member is an AlInGaN buffer layer.
9. (Currently Amended) A gallium nitride (GaN)-based compound semiconductor device according to claim 8, comprising:
a GaN-based light emitting member; and
an AlInGaN buffer layer adjacent to the light emitting member,
wherein the light emitting member comprises a multilayer quantum well structure including at least one InGaN well layer and at least one AlInGaN barrier layer,
and,
wherein a compositional ratio of Al in the AlInGaN buffer layer is 0.5% or greater and 40% or smaller, and a compositional ratio of In in the AlInGaN buffer layer is 0.1% or greater and 5% or smaller.
10. (Currently Amended) [[A]] The gallium-nitride GaN-based compound semiconductor device according to claim [[8]]9, wherein a compositional ratio of Al in the AlInGaN buffer layer is between 1% or greater and 40% or smaller, and a compositional ratio of In in the AlInGaN buffer layer is between 0.1% or greater and 3% or smaller.
11. (Currently Amended) [[A]] The gallium-nitride GaN-based compound semiconductor device according to claim 1, wherein the InGaN well layer and the AlInGaN barrier layer are formed at a temperature of 750° C[[.]] or greater.

12. (New) The GaN-based semiconductor compound semiconductor device according to claim 1, further comprising a strained layer superlattice (SLS) clad layer.
13. (New) The GaN-based semiconductor compound semiconductor device according to claim 12, wherein the SLS clad layer is an n-clad layer.
14. (New) The GaN-based semiconductor compound semiconductor device according to claim 13, wherein the SLS clad layer comprises alternately layered n-GaN and n-AlGaN.
15. (New) The GaN-based semiconductor compound semiconductor device according to claim 13, further comprising a p-type SLS clad layer.
16. (New) A method of manufacturing a GaN-based semiconductor compound semiconductor device, comprising:
 - growing a buffer layer on a substrate;
 - growing a strained layer superlattice clad layer;
 - growing an AlInGaN buffer layer; and
 - growing, adjacent to the AlInGaN buffer layer, at a temperature of 750° C or higher, a multi-layer quantum well structure including alternately layered InGaN well layers and AlInGaN barrier layers.